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Our Ref.: 2590-30  
Your Ref.: 09/806,831 Date: October 17, 2003

To: Examiner Kaveh C. Kianni – Group Art Unit 2877  
Firm: U.S. Patent and Trademark Office  
Facsimile No.: (703) 308-7721  
From: Michael J. Shea

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Debbie Phelps  
FACSIMILE OPERATOR

**ATTACHMENT/S: Discussion Points for Interview**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent application:

Atty. Ref.: 2590-30

***BEVILACQUA et al.***

Group Unit: 2877

Serial No.: 09/806,831

Examiner: K. Kianni

Filed: April 5, 2001

For: METHOD AND APPARATUS FOR MEASURING  
LOCALLY AND SUPERFICIALLY THE SCATTERING  
AND ABSORPTION PROPERTIES OF TURBID MEDIA**DRAFT**

\* \* \* \* \*

October 17, 2003

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

DISCUSSION POINTS FOR INTERVIEW

Sir:

Applicants submit the following discussion points for a personal interview with Examiner Kianni in connection with the subject patent application.

(1) The parameter  $\gamma = (1 - g_2)/(1 - g_1)$  described in the subject patent application and specified in claim 1 is a new concept and is not related to  $g$  and  $g'$  appearing in equation 13 of Wu *et al.*:  $k(g')/k(g) = 1 - g'/1 - g$ . Specifically,  $g$  and  $g'$  are both first order moments, whereas  $g_1$  and  $g_2$  are respectively the first and second order moments of the development of the phase function  $p(\theta)$  in Legendre polynomials. Consequently, the parameter  $\gamma$  and equation 13 of Wu *et al.* are quite different. Indeed, Wu *et al.* does not mention the second order moment of the phase function. The approach of the subject application is fundamentally different and cannot be derived from Wu *et al.*'s approach.

BEVILACQUA et al.  
Application No. 09/806,831

**DRAFT**

(2) The subject patent application discloses a system and method for determining optical characteristics such as the absorption coefficient  $\mu_a$ , the reduced scattering coefficient  $\mu_s'$  and a parameter  $\gamma$  from the spatially resolved reflectance  $R(\rho)$ . This determination involves, among other things, the dependence of the diffuse reflectance  $R$  on the distance  $\rho$  separating the source of illumination and the optical detector. This dependence of  $R$  on  $\rho$  does not at all appear in Wu et al. The diffuse reflectance  $R(\mu_a, \mu_s, g)$  of Wu et al. is a value of the reflectance integrated over space and does not contain any information on its dependence on the source-detector distance  $\rho$ . Although the office action of 5/20/03 refers to the "z" described in column 8 of Wu et al. as the "source-detector distance," "z" actually refers to tissue depth. See, e.g., col. 8, line 9-11.

Respectfully submitted,  
**NIXON & VANDERHYE P.C.**

  
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